1997 Journal of Fluids Engineering Index
Index by Subject Matter to JFE, Vol. 119
Nos. 1–4, 1997

AIRFOILS AND HYDROFOILS

Airfoil Section Characteristics at a Low Reynolds Number, Shigeru Sunada, Akitoshi Sakaguchi, and Keiji Kawachi, March, 129–135.

Computation of Unsteady Viscous Marine-Propulsor Blade Flows—Part 1: Validation and Analysis, E. G. Paterson and F. Stern, March, 145–154.

Numerical Study of Sail Aerodynamics, Michel Guilbaud and D. R. Rajaona, December, 960–967.

BLUFF-BODY FLOWS

Turbulent Near Wake Behind a Partially Grooved Circular Cylinder, K. W. Lo and N. W. M. Ko, March, 19–28.

Experimental Study of Turbulent Concentration Flow Field in the Wake of a Bluff Body, R. Balachandar, Vincent H. Chu, and Jianbo Zhang, June, 263–270.

A Numerical Study on Motion of a Sphere Coated with a Thin Liquid Film at Intermediate Reynolds Numbers, S. Kawano and H. Hashimoto, June, 397–403.

Flow Characteristics of a Bluff Body Cut from a Circular Cylinder, S. Aiba and H. Watanabe, June, 453–454.

A Design Method for Contractions with Square End Sections, Fuh-Min Fang, June, 454–458.

Simultaneous Velocity and Temperature Patterns in the Far Region of a Turbulent Cylinder Wake, A. Vernet, G. A. Kopp, J. A. Ferré, and F. Giralt, June, 463–466.

Flow Over Tube Banks—A Visualization Study, J. W. Hoyt and R. H. J. Sellin, June, 480–483.

Flow Past Large Obstructions Between Corotating Disks in Fixed Cylindrical Enclosures, Hiroshi Suzuki and Joseph A. C. Humphrey, September, 499–505.

A Numerical Study of Vortex Shedding from a Square Cylinder with Ground Effect, Robert W. Hwang and Chia-Chi Yao, September, 512–518.

BOUNDARY LAYER AND SHEAR FLOWS

Boundary Layer Flow About and Inside a Liquid Sphere, Maged A. I. El-Shaarawi, Abdulghani Al-Farayedhi, and Mohamed A. Antar, March, 42–49.

Prediction of Transpired Turbulent Boundary Layers with Arbitrary Pressure Gradients, Miodrag Oljaca and James Sucec, September, 526–532.

Boundary Layer Excitation by Periodic Heating of a Thin Ribbon, B. A. Haven and M. E. Franke, September, 559–561.

The Production of Shear Flow Profiles in a Wind Tunnel by a Shaped Honeycomb Technique, F. Ahmed and B. E. Lee, September, 713–715.

CAVITATION

The Case of the Singing Vortex, B. Maines, and R. E. A. Arndt, June, 271–276.

Tip Vortex Formation and Cavitation, B. H. Maines and R. E. A. Arndt, June, 413–419.

Numerical Modeling of the Thermodynamic Effects of Cavitation, Manish Deshpande, Jinzhang Feng, and Charles L. Merkle, June, 420–427.

The Erosive Axial Collapse of a Cavitating Vortex: An Experimental Study, M. A. Dominguez-Cortazar, J. P. Franc, and J. M. Michel, September, 686–691.

Dynamical Nuclei Measurement: On the Development and the Performance Evaluation of an Optimized Center-Body Meter, T. M. Pham, J. M. Michel, and Y. Lecoffre, December, 744–751.

Tip Vortex Cavitation on an Oscillating Hydrofoil, O. Boulon, J. P. Franc, and J. M. Michel, December, 752–758.

Equilibrium of Ventilated Cavities in Tip Vortices, F. Castro, A. Crespo, F. Manuel, and D. H. Fruman, December, 759–767.

Rotordynamic Forces in Cavitating Inducers, A. Bhattacharyya, A. J. Acosta, C. E. Brennen, and T. K. Caughey, December, 768–774.

Observations of Oscillating Cavitation of an Inducer, Yoshinobu Tsujimoto, Yoshiki Yoshida, Yasukazu Maekawa, Satoshi Watanabe, and Tomoyuki Hashimoto, December, 775–781.

Diffusion Induced Bubble Populations Downstream of a Partial Cavity, Po-Wen Yu and Steven L. Ceccio, December, 782–787.

Mechanism and Control of Cloud Cavitation, Y. Kawanami, H. Kato, H. Yamaguchi, M. Tanimura, and Y. Tagaya, December, 788–794.

COMPUTATIONAL METHODS

Numerical Verification of Scaling Laws for Shock-Boundary Layer Interactions in Arbitrary Gases, M. S. Cramer, S. H. Park, and L. T. Watson, March, 67–73.

Status of Large Eddy Simulation: Results of a Workshop, W. Rodi, J. H. Ferziger, M. Breuer, and M. Pourquié, June 248–262.

Strongly-Coupled Multigrid Method for 3-D Incompressible Flows Using Near-Wall Turbulence Closures, F. B. Lin and F. Sotiropoulos, June, 314–324.

Assessment of Artificial Dissipation Models for Three-Dimensional Incompressible Flow Solutions, F. B. Lin and F. Sotiropoulos, June, 331–340.

Stability of Various Molecular Dynamics Algorithms, Akira Satoh, June, 476–480.

Application of Large Eddy Simulation to an Oscillating Flow Past a Circular Cylinder, Xiyun Lu, Charles Dalton, and Jianfeng Zhang, September, 519–525.

Numerical Analysis of Turbulent Flow in Fluid Couplings, L. Bai, M. Fiebig, and N. K. Mitra, September, 569–576.

Effects of Efficiency Techniques on Accuracy of Dynamic-Overlapped Grids for Unsteady Flows, Guan-Wei Yen and Oktay Baysal, September, 577–583.

Numerical Experiments on Application of Richardson Extrapolation with Nonuniform Grids, Ismael Celik and Ozgur Karetekin, September, 584–590.

Uncertainties and CFD Code Validation, H. W. Coleman and F. Stern, December, 795–803.

A Perspective on the Construction of Nonsymmetric Uncertainty Intervals, Paul K. Maciejewski, December, 804–807.

State Estimator of Flow as an Integrated Computational Method with the Feedback of Online Experimental Measurement, Toshiyuki Hayase and Satoru Hayashi, December, 814–822.

On Oscillatory Instability of Convective Flows at Low Prandtl Number, A. Yu Gelfgat, P. Z. Bar-Yoseph, and A. L. Yarin, December, 823–830.

Parametric Studies on a Numerical, Nonlinear Pulse Tube Flow, C. S. Kirkconnell and G. T. Colwell, December, 831–837.

Multigrid Computation of Incompressible Flows Using Two-Equation Turbulence Models: Part I—Numerical Method, X. Zheng, C. Liao, C. Liu, C. H. Sung, and T. T. Huang, December, 893–899.

Multigrid Computation of Incompressible Flows Using Two-Equation Turbulence Models: Part II—Applications, X. Zheng, C. Liao, C. Liu, C. H. Sung, and T. T. Huang, December, 900–905.

Copyright © 1998 by ASME

FLOW CONTROL

Low-Speed Maneuvering Hydrodynamics of Fish and Small Underwater Vehicles, P. R. Bandyopadhyay, J. M. Castano, J. Q. Rice, R. B. Phillips, W. H. Nedderman, and W. K. Macy, March, 136–144.

The Response of a Turbulent Boundary Layer to a Square Groove, B. R. Pearson, R. Elavarasan, and R. A. Antonia, June, 466–469.

The Effect of Induced Swirl on Mixing, D. W. Guillaume and J. C. LaRue, June, 471–473.

Suppression of Fluid Forces Acting on a Square Prism by Passive Control, H. Sakamoto, K. Tan, N. Takeuchi, and H. Haniu, September, 506–511.

The Influence of the Regulator Diameter and Injection Nozzle Geometry on the Flow Structure in Pneumatic Dimensional Control Systems, C. Crnojevic, G. Roy, A. Bettahar, and P. Florent, September, 609–615.

Numerical Simulation of Drag Reducing Turbulent Flow in Annular Conduits, Idir Azouz and Siamack A. Shirazi, December, 838–846.

Linear Feedback Control of Boundary Layer Using Electromagnetic Microtiles, by S. N. Singh and P. R. Bandyopadhyay, December, 852–858.

On the Accuracy of Walls Similarity Methods in Determining Friction Velocity Over Smooth and Ribletted Surfaces, A. Baron and M. Quadrio, December, 1009–1011.

FLOW MEASUREMENTS

Review: Hot-Wire Anemometry in Transonic and Subsonic Slip Flows (Data Bank Contribution), P. C. Stainback and K. A. Nagabushana, March, 14–18.

Comparisons of Magnetic Resonance Imaging Velocimetry with Computational Fluid Dynamics, B. Newling, S. J. Gibbs, J. A. Derbyshire, D. Xing, L. D. Hall, D. E. Haycock, W. J. Frith, and S. Ablett, March, 103–109.

A Capacitance Sensor for Two-Phase Liquid Film Thickness Measurements in a Square Duct, G. E. Thorncroft and J. F. Klausner, March, 164–169.

LDV Measurements of Spatially Periodic Flows Over a Detached Solid-Rib Array, Tong-Miin Liou, Chih-Ping Yang, and Hsin-Li Lee, June, 383–389.

FLOW THROUGH POROUS MEDIA

Contaminant Transport Through Single Fracture with Porous Obstructions, J. L. Lage, March, 180–187.

Fluid Flow Through Randomly Packed Monodisperse Fibers: The Kozeny-Carman Parameter Analysis, O. Rahli, L. Tadrist, M. Miscevic, and R. Santini, March, 188–192.

Experimental Determination of Permeability and Inertia Coefficients of Mechanically Compressed Aluminum Porous Matrices, B. V. Antohe, J. L. Lage, D. C. Price, and R. M. Weber, June, 404–412.

Two Types of Nonlinear Pressure-Drop Versus Flow-Rate Relation Observed for Standard Porous Media (Data Bank Contribution), J. L. Lage, B. V. Antohe, and D. A. Nield, September, 700–706.

FLUID MACHINERY

Flow Field Unsteadiness in the Tip Region of a Transonic Compressor Rotor, S. L. Puterbaugh and W. W. Copenhaver, March, 122–128.

Effects of N^+ Ion Implantation on Surface Modification of Cavitation Damage for OCr13Ni9Ti SS of Turbine Materials, Jian Hua Wu and Gong Chun Chai, March, 204–208.

Design of Homologous Ram Pumps, Brian Young, June, 360–365.

Fluid Force Moment on a Centrifugal Impeller Shroud in Precessing Motion, Yoshinobu Tsujimoto, Yoshiki Yoshida, Hideo Ohashi, Norihiro Teramoto, and Shin Ishizaki, June, 366–371.

Navier-Stokes Simulations of a Novel Viscous Pump, M. C. Sharatchandra, Mihir Sen, and Mohamed Gad-el-Hak, June, 372–382.

A Digital Particle Image Velocimetry Investigation of Flow Field Instabilities of Axial-Flow Impellers, K. J. Myers, R. W. Ward, and André Bakker, September, 623–632.

Visualization Measurement and Numerical Analysis of Internal Flow in Cross-Flow Fan, Hiromu Tsurusaki, Yoshinobu Tsujimoto, Yoshiki Yoshida, and Koichi Kitagawa, September, 633–638.

Prediction of Flow Behavior and Performance of Squirrel-Cage Centrifugal Fans Operating at Medium and High Flow Rates, R. J. Kind, September, 639–646.

Theoretical Study of Pressure Fluctuations Downstream of a Diffuser Pump Impeller—Part 1: Fundamental Analysis on Rotor-Stator Interaction, W. Qin and H. Tsukamoto, September, 647–652.

Theoretical Study of Pressure Fluctuations Downstream of a Diffuser Pump Impeller—Part 2: Effects of Volute, Flow Rate, and Radial Gap, W. Qin and H. Tsukamoto, September, 653–658.

Development and Optimization of Screw Machines with a Simulation Model—Part I: Profile Generation, N. Stošić and K. Hanjalić, September, 659–663.

Development and Optimization of Screw Machines with a Simulation Model—Part II: Thermodynamic Performance Simulation and Design Optimization, K. Hanjalić and N. Stošić, September, 664–670.

Riser-Relief Valve Dynamic Interactions, K. K. Botros, G. H. Dunn, and J. A. Hrycyk, September, 671–679.

Tip Clearance and Tip Vortex Cavitation in an Axial Flow Pump, R. Laborde, P. Chantrel, and M. Mory, September, 680–685.

Experimental Comparison of Flow Fields at the Inlet and the Outlet of an Inducer with Shrouded and Unshrouded Configurations, C. Offtinger, C. Henry, R. Morel, and F. Spettel, December, 954–959.

Flow Analysis in a Pump Diffuser—Part 1: LDA and PTV Measurements of the Unsteady Flow, K. Eisele, Z. Zhang, M. V. Casey, J. Gülich, and A. Schachenmann, December, 968–977.

Flow Analysis in a Pump Diffuser—Part 2: Validation and Limitations of CFD for Diffuser Flows, F. A. Muggli, K. Eisele, M. V. Casey, J. Gülich, and A. Schachenmann, December, 978–984.

Unsteady Total Pressure Field Downstream of an Embedded Stator in a Multistage Axial Flow Compressor, N. Suryavamshi, B. Lakshminarayana, J. Prato, and J. R. Fagan, December, 985–994.

A Generalized Gas-Liquid-Solid Three-Phase Flow Analysis for Airlift Pump Design, D. P. Margaris and D. G. Papanikas, December, 995–1002.

FLUID-STRUCTURE INTERACTIONS

Transient Fluid-Structure Interaction in a Control Valve, Tienfuan Kerh, J. J. Lee, and L. C. Welford, June, 354–359.

GENERAL TOPICS

Perspective: Measurements and Analyses of Nonlinear Wave Interaction with Higher-Order Spectral Moments, M. R. Hajj, R. W. Miksad, and E. J. Powers, March, 3–13.

On the Slightly Reduced Navier-Stokes Equations, Jian-Zhong Xu and Wen-Sheng Yu, March, 90–95.

Air Venting in Pressure Die Casting, G. Bar-Meir, E. R. G. Eckert, and R. J. Goldstein, June, 473–476.

Effect of a Crossflow at the Entrance to a Film-Cooling Hole, K. A. Thole, M. Gritsch, A. Schulz, and S. Wittig, September, 533–540.

Experimental Study of Deformation Mechanism of a Water Droplet Impinging on Hot Metallic Surfaces Above the Leidenfrost Temperature (Data Bank Contribution), Natsuo Hatta, Hitoshi Fujimoto, Kenji Kinoshita, and Hirohiko Takuda, September, 692–699.
Developing Laminar Flow in Eccentric Annuli, Maged A. I. El-Shaarawi, Habib I. Abualhamayel, and Esmail M. A. Mokheimer, September, 724–728.
Chebyshev Collocation Analysis of Axisymmetric Flow and Heat Transfer Between Counter-Rotating Disks, R. W. Hill and K. S. Ball, December, 940–947.
Wall Pressure and Effective Wall Shear Stresses in Heat Exchanger Tube Inlets with Application to Erosion-Corrosion, D. G. Elvery and K. Bremhorst, December, 948–953.
Perturbation Solution for Flow in Two-Cavity Dies, K. J. Ruschak and S. J. Weinstein, December, 1003–1008.

JET FLOWS

Energy Separation in a Jet Flow, W. S. Seol and R. J. Goldstein, March, 74–82.
Predictions of Impacting Sonic and Supersonic Jets, P. S. Cumber, M. Fairweather, S.A.E.G. Falle, and J. R. Giddings, March 83–89.
Near-Wall Modeling of Plane Turbulent Wall Jets, G. Gerodimos and R. M. C. So, June, 304–313.
Shape of an Annular Liquid Jet, M. Z. Hasan, Y. Mitsutake, and M. Monde, September, 591–596.
Air Entrainment in the Developing Flow Region of Plunging Jets—Part 1: Theoretical Development, P. D. Cummings and H. Chanson, September, 597–602.
Air Entrainment in the Developing Flow Region of Plunging Jets—Part 2: Experimental (Data Bank Contribution), P. D. Cummings and H. Chanson, September, 603–608.
Analytical Solutions for the Developing Jet from a Fully-Developed Laminar Tube Flow, D. S. Lee, K. D. Kihm, and S. H. Chung, September, 716–718.
A Study on Converging Thin Annular Jets, D. Sivakumar and B. N. Raghunandan, December, 923–928.
Jet-Plate Interaction for Wedge-Shaped Plates of Arbitrary Angles, S. S. Chu and W. L. Chow, December, 929–933.

MULTIPHASE FLOWS

The Effects of Salt Water on Bubble Cavitation, S. Ceccio, S. Gowing, and Y. T. Shen, March, 155–163.
Review—The Transient Equation of Motion for Particles, Bubbles, and Droplets, E. E. Michaelides, June, 233–247.
The Rise of Bubbles in a Vertical Shear Flow, E. A. Ervin and G. Tryggvason, June, 443–449.
A Two-Phase Cinematic PIV Method for Bubbly Flows, T. R. Oakley, E. Loth, and R. J. Adrian, September, 707–712.
Interfacial Area Concentration and Void Fraction of Two-Phase Flow in Narrow Rectangular Vertical Channels, T. Wilmarth and M. Ishii, December, 916–922.

NON-NEWTONIAN FLOWS

The Axisymmetric Sudden Expansion Flow of a Non-Newtonian Viscoplastic Fluid, G. C. Vradis and M. V. Ötügen, March, 193–200.
A Finite-Element Study of Newtonian and Power-Law Fluids in Conical Channel Flow, S. H. Garrioch and D. F. James, June, 341–346.
On the Influence of Liquid Elasticity on Mixing in a Vessel Agitated by a Two-Bladed Impeller, A. Youcefi, D. Anne-Archard, H. C. Boisson, and M. Sengelin, September, 616–722.

PARTICULATE FLOW

Turbulent Dispersion of Heavy Particles with Nonlinear Drag, Renwei Mei, R. J. Adrian, and T. J. Hanratty, March, 170–179.
Ensemble-Average Equations of a Particulate Mixture, L. M. Liljegren, June, 428–434.
Simulation of Chaotic Particle Motion in Particle-Laden Jetflow and Application to Abrasive Waterjet Machining, Z. Yong and R. Kovacevic, June, 435–442.
Turbulence Modification in the Limiting Cases of Heavy- and Tracer-Particles, D. I. Graham, June, 458–460.

PIPE, DUCT, CHANNEL FLOWS

Numerical Simulation of Channel Flows by a One-Equation Turbulence Model, V. I. Vasiliev, D. V. Volkov, S. A. Zaitsev, and D. A. Lyubimov, December, 885–892.
Open Channel Flow over Submerged Obstructions: An Experimental and Numerical Study, Dani Fadda and Peter E. Raad, December, 906–910.
Correlated Compressible and Incompressible Channel Flows, C. Crnojevic and V. D. Djordjevic, December, 911–915.

STABILITY AND TRANSITION

Oscillatory Momentum Transport Mechaisms in Transitional Complex Geometry Flows, D. Majumdar and C. H. Amon, March, 29–35.
The Effect of Pressure Gradients on Transition Zone Length in Hypersonic Boundary Layers, R. L. Kimmel, March, 36–41.
Application of Turbulence Models to Bypass Transition, K. J. A. Westin and R. A. W. M. Henkes, December, 859–866.

TURBULENT FLOWS

Effects of Convection and Decay of Turbulence on the Wall Pressure Wavenumber-Frequency Spectrum, W. L. Keith and B. M. Abraham, March, 50–55.
Turbulent Wall-Pressure Fluctuations: A New Model for Off-Axis Cross-Spectral Density, B. A. Singer, June, 277–280.
Wavenumber Spectra of High Magnitude Wall Pressure Events in a Numerically Simulated Turbulent Boundary Layer, B. M. Abraham and W. L. Keith, June, 281–288.
The Use of Pattern Recognition and Proper Orthogonal Decomposition in Identifying the Structure of Fully-Developed Free Turbulence, G. A. Kopp, J. A. Ferré, and Francesc Giralt, June, 289–296.
Aero-Thermodynamic Loss Analysis in Cases of Normal Shock Wave-Turbulent Shear Layer Interaction, J. K. Kaldellis, June, 297–303.
A Reynolds Stress Function for Wall Layers, R. L. Panton, June, 325–330.
A Short Comparison of Damping Functions of Standard Low-Reynolds-Number k-ϵ Models, A. N. Rousseau, L. D. Albright, and K. E. Torrance, June, 460–463.
Effect of Roughness Aspect Ratio on the "Bursting" Period in a Fully Turbulent Channel Flow, L. Labraga, A. Mazouz, S. Demare, and C. Tournier, June, 469–471.
Turbulence Model for Steady and Unsteady Boundary Layers in Strong Pressure Gradients, E. Hytopoulos, J. A. Schetz, and R. L. Simpson, September, 541–549.
Calculation of Fully-Developed Turbulent Flow in Rectangular Ducts with Nonuniform Wall Roughness, M. Naimi and F. B. Gessner, September, 550–558.
New Parameters Describing Extra Straining Effects in Turbulence Models, Hyon Kook Myong, September, 721–724.
Friction Factor Determination for Flow Through Finite Wire-Mesh Woven-Screen Matrices, J. R. Sodré and J. A. R. Pairse, December, 847–851.
A Modified Low-Reynolds-Number k-ω Model for Recirculating Flows, Shia-Hui Peng, Lars Davidson, and Sture Holmberg, December, 867–875.
Eddy Viscosity Transport Equations and Their Relation to the k-ϵ Model, F. R. Menter, December, 876–884.

UNSTEADY FLOWS

Effects of Bulk Flow Pulsations on Film-Cooled Boundary Layer Structure, P. M. Ligrani, R. Gong, J. M. Cuthrell, and J. S. Lee, March, 56–66.

Numerical Analysis of Unsteady Flow in the Weis-Fogh Mechanism by the 3D Discrete Vortex Method with GRAPE3A, Kideok Ro and Michihisa Tsutahara, March, 96–102.
Stokes Flow Through a Transversely Finned Channel, C. Y. Wang, March 110–114.
Flow Driven by a Torsionally-Oscillating Shrouded Endwall Disk, Tae Gyu Lim and Jae Min Hyun, March, 115–121.
Laminar Pulsatile Flow Through an Axisymmetric Sudden Expansion, R. Budwig, C. J. Egelhoff, and S. Tavoularis, March, 208–211.
An Experimental Investigation into the Breakdown of Low Reynolds Number Pulsed Flows at a Pipe Orifice, P. S. Addison, D. A. Ervine, A. H. C. Chan, and K. J. Williams, June, 347–353.
Axisymmetric Inertial Oscillations in Transient Rotating Flows in a Cylinder, Jae Won Kim and Jae Min Hyun, June, 390–396.
Interaction of a Steady Approach Flow and a Circular Cylinder Undergoing Forced Oscillation, Jianfeng Zhang and Charles Dalton, December, 808–813.

VORTICES

On End-Wall Corner Vortices in a Lid-Driven Cavity, T. P. Chiang, Robert R. Hwang, and W. H. Sheu, March, 201–204.
Time-Dependent Vortex Breakdown in a Cylinder with a Rotating Lid, Kazuyuki Fujimura, Hide S. Koyama, and Jae Min Hyun, June, 450–453.
Measurements in a Transitional Boundary Layer with Görtler Vortices (Data Bank Contribution), R. J. Volino and T. W. Simon, September, 562–568.
The Effect of Negative Spanwise Rotation on Dean Vortices, by Liqiu Wang, September, 718–721.
Nearfield Evolution of a Longitudinal Vortex Generated by an Inclined Jet in a Turbulent Boundary Layer, X. Zhang and M. W. Collins, December, 934–939.